

c.) Amendments to the Claims

1-20. (Cancelled)

21. (New) A process for producing a uridine diphosphate sugar, which comprises:

selecting as an enzyme sources a yeast cell selected from the group consisting of *Saccharomyces* and *Kluyveromyces* or a treated product thereof, said yeast or treated product being capable of producing a uridine diphosphate sugar from a nucleotide precursor selected from the group consisting of orotic acid, uracil, orotidine and uridine, and a sugar;

carrying out an enzyme reaction in an aqueous medium containing the enzyme sources, the nucleotide precursor and the sugar to form and accumulate the uridine diphosphate sugar in the aqueous medium; and

recovering the uridine diphosphate sugar from a supernatant of the aqueous medium.

22. (New) A process for producing a complex carbohydrate, which comprises:

selecting as a first enzyme source, a yeast cell or a treated product thereof selected from the group consisting of *Saccharomyces* and *Kluyveromyces*, said yeast being capable of producing a uridine diphosphate sugar from a nucleotide precursor selected from the group consisting of orotic acid, uracil, orotidine and uridine, and a sugar;

carrying out an enzyme reaction in a first aqueous medium containing the first enzyme source, the nucleotide precursor and the sugar to form and accumulate the uridine diphosphate sugar in the first aqueous medium;

recovering the uridine diphosphate sugar from a supernatant of the first aqueous medium;

selecting as a second enzyme source, a microorganism or animal cell capable of producing a complex carbohydrate from the uridine diphosphate compound and a precursor of complex carbohydrate selected from the group consisting of monosaccharides, oligosaccharides, proteins, peptides, glycoproteins, glycolipids and glycopeptides or a treated product thereof;

carrying out an enzyme reaction in the first or a second aqueous medium containing the second enzyme source, the precursor of complex carbohydrate and the uridine diphosphate sugar to form and accumulate the complex carbohydrate in the first or second aqueous medium, and

recovering the complex carbohydrate from the first or second aqueous medium.

23. (New) The process according to either claims 21 and 22, wherein the treated product a dried product of the cells a freeze-dried product of the cells, a surfactant-treated product of the cells, an ultrasonic-treated product of the cells, a mechanically disrupted product of the cells, a solvent-treated product of the cells, an enzyme-treated product of the cells, a protein fraction of the cells, an immobilized product of the cells or an enzyme preparation obtained by extraction from the cells.

24. (New) The process according to either of claims 21 and 22, wherein the uridine diphosphate sugar is selected from the group consisting of uridine-diphosphate glucose, uridine-diphosphate galactose, uridine-diphosphate N-acetylglucosamine and uridine-diphosphate N-acetylgalactosamine.

25. (New) The process according to either of claims 21 and 22, wherein the sugar is a sugar selected from glucose, galactose, glucosamine, N-acetylglucosamine and N-acetylgalactosamine.

26. (New) The process according to claim 22, wherein the precursor of complex carbohydrate is N-acetylglucosamine or N-acetylglucosamine β 1-3galactose β 1-4 glucose.

27. (New) The process according to claim 22, wherein the complex carbohydrate is a glucose-containing complex carbohydrate, a N-acetylglucosamine-containing complex carbohydrate, a galactose-containing complex carbohydrate, or a N-acetylgalactosamine-containing complex carbohydrate.

28. (New) The process according to claim 27, wherein the galactose-containing complex carbohydrate is a complex carbohydrate selected from lacto-N-tetraose and lacto-N-neotetraose.

29. (New) The process according to claim 22, wherein the microorganism capable of producing a complex carbohydrate from a sugar nucleotide and a complex carbohydrate precursor is recombinant *Escherichia coli* or *Saccharomyces cerevisiae*.

30. (New) The process according to claim 22, wherein the animal cell capable of producing a complex carbohydrate from a sugar nucleotide and a complex carbohydrate precursor is recombinant COS-7 cell or namalwa KJM-1 cell.

31. (New) The process according to claim 30, wherein the animal cell is transformed with a plasmid comprising DNA encoding β 1,3-galactosyltransferase.

32. (New) The process according to claim 31, wherein the DNA encoding β 1,3-galactosyltransferase is derived from human melanoma cells line WM266-4.

33. (New) The process according to claim 31, wherein the animal cell is namalwa KJM-1/pAMoERSAW1.